

ABSTRACT

In optical communications between a base station and a local station, the wavelength of a laser light source for a signal, high LD, in the base station that generates downstream signal light is set to a wavelength with an effect of Raman amplifying an upstream light signal that propagates through an optical fiber 2. In the optical fiber 2, an upstream light signal transmitted from the local station to the base station is amplified with the downstream signal light from the laser light source for a signal, high LD, while the upstream light signal is propagating through the optical fiber 2.